

## Five newly recorded species of genus *Cassida* from Northeast China with one new record species from China

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**Abstract:** This paper reported five newly recorded species of genus *Cassida* (*Cassida mandli* Spaeth, *Cassida nobilis* Linnaeus, *Cassida piperata* Hope, *Cassida velaris* Weise, *Cassida amurensis* (Kraatz)) in Provinces of Northeast China, and one Cassidinae species (*Cassida flaveola* Thunberg) newly recorded in China. All the specimens examined are deposited in insect collection at Northeast Forestry University, China. Brief diagnosis of new record species and a key to species of genus *Cassida* in Northeast China were also provided.

**Keywords:** Cassidinae; *Cassida*; taxonomy; Northeast China; new record species

### Introduction

The subfamily Cassidinae, belonging to Coleoptera, Chrysomelidae, distributes worldwide and has been described about 2760 species to date (Borowiec 1996). Many species have a variety of types in the tropics as compared with scarce variety in temperate regions. All the Cassidinae species are leaf-feeding insects both at the larval and adult stages, and entirely feed on the surface of leaves.

The genus *Cassida* is well characterized by body rounded to elliptical or trapeziform, dorsum usually bare, clypeus at most twice as wide as long. Pronotum broader than long, disc of elytra regularly convex or depressed. Punctuation partly or completely regular. Explanate margin of elytra varying from narrow to broad, usually distinctly narrower than half width of disc. Venter of pronotum without antennal groove. Tarsal claws simple.

In recent years, no report was found on the systematic study of the subfamily Cassidinae in China, except the work of early authors (Gressitt & Kimoto 1963; Chen et al 1986). In China, about 19 genera and 163 species of the subfamily Cassidinae have been reported up to date (Chen et al 1986; Hua 2002). In this paper, 21 species of the genus *Cassida* distributed in Northeast China were reported, including a new record species, *Cassida flaveola* Thunberg in China, and five species newly recorded in Northeast China. All the specimens examined are deposited in insect collection at Northeast Forestry University, China.

### New Record Species of *Cassida* in Northeast China

#### *Cassida mandli* Spaeth

*Cassida* (s. str.) *mandli* Spaeth, 1921, Koleopt. Rdsch. 6: 84. –Gressitt, 1952, Proc. Calif. Acad. Sci. 27(17): 512. –Chen et al., 1986, Fauna Sinica, Insecta. 480, 627.

Material examined: 2exs, Laoshan, Prov. Heilongjiang, 11-VII-2006.

Host plants: *Artemisia* spp.

Distribution: China (Heilongjiang, Liaoning, Inner Mongolia, Hebei, Shanxi, Shandong), Korea, Mongolia, Russia (Siberia).

Remarks: This species is firstly recorded from Heilongjiang Province.

#### *Cassida nobilis* Linnaeus

*Cassida nobilis* Linnaeus, 1758, Syst. Nat. ed. X: 363. –Fabricius, 1775, Syst. Ent.: 90. –Boheman, 1854, Mon. Cassid. II: 423. –Weise, 1893, Ins. Deutschl. 6: 1082, 1113.

*Cassida* (*Cassidula*) *nobilis*: Weise, 1889, Wien. ent. Ztg. 8: 260. –Reitter, 1912, Fauna Germ. IV: 218, pl. 150, Fig. 22.

*Cassida* (*Cassidulella*) *nobilis*: Chujô & Kimoto, 1960, Nipponius 1 (4): 10. –Gressitt. & Kimoto, 1963, Pacific Ins. Monogr. 1B: 984. –Chen et al., 1986, Fauna Sinica, Insecta. 465, 625.

Material examined: 2exs, Zhalong, Prov. Heilongjiang, 26-VI-2007.

Host plants: *Atriplex* spp., *Chenopodium* spp., *Salsola* spp., *Beta* spp.

Distribution: China (Heilongjiang, Xinjiang), Korea, Japan, Russia (Siberia), Europe.

Remarks: This species is firstly recorded from Heilongjiang Province.

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*Cassida piperata* Hope

*Cassida piperata* Hope, 1842, Proc. Ent. Soc. London I: 62. –Weise, 1900, Arch. F. Naturg. 56(1): 295. –Spaeth, 1926, Best.-Tab. Eur. Col. 95: 30. –Chujō, 1936, Mushi. XI: 169.

*Cassda (s.str.) piperata*: Gressitt, 1952, Proc. Calif. Acad. Sci. 27(17): 515. –Gressitt & Kimoto, 1963, Pacific Ins. Monogr. 1B: 981. –Kimoto, 1966, Journ. Fac. Agric. Kyushu Univ. 13(4): 654. –Chen et al., 1986, Fauna Sinica, Insecta. 478, 625.

*Cassida labilis* Boheman; 1854, Mon. Cassid. II: 402.

*Cassida biguttulata* Kraatz, 1879, Dtsch. ent. Z. 23: 275.

*Coptocycla sparsa* Gorham, 1885, Proc. Zool. Soc. London: 284.

Material examined: 3exs, Yanji-tianqiaoling, Prov. Jilin, 4-VIII-2007.

Host plants: *Alternanthera sessilis*, *Achyranthes* spp., *Amaranthus* spp., *Celosia* spp., *Chenopodium* spp., *Beta* spp., *Atriplex* spp.

Distribution: China (Heilongjiang, Jilin, Liaoning, Hebei, Beijing, Henan, Tianjin, Shaanxi, Shandong, Shanghai, Hubei, Zhejiang, Jiangxi, Jiangsu, Fujian, Taiwan, Guangdong, Guangxi, Guizhou, Sichuan, Yunna), Korea, Japan, Philippines, Vietnam, Russia (Siberia).

Remarks: This species is firstly recorded from Jilin Province.

*Cassida velaris* Weise

*Cassida velaris* Weise, 1896, Dtsch. ent. Z.: 28. –Spaeth, 1914, Verh. Zool. bot. Ges. Wien 64: 146.

*Cassida (Cassidula) velaris*: Spaeth, 1926, Best.-Tab. Eur. Col. 95: 54. –Chujō, 1934, Sylvia 5: 169.

*Cassida (Cassidulella) velaris*: Gressitt, 1952, Proc. Calif. Acad. Sci. 27(17): 524. –Gressitt & Kimoto. 1963, Pacific Ins. Monogr. 1B: 984. –Chen et al, 1986, Fauna Sinica, Insecta: 467, 625.

Material examined: 6exs, Pingshan, Prov. Heilongjiang, 5-VII-2007.

Host plant: *Humulus scandens*.

Distribution: China (Heilongjiang, Jilin, Qinghai, Shanxi, Xizang), Japan, Korea, Russia (Siberia).

Remarks: This species is firstly recorded from Heilongjiang Province.

*Cassida amurensis* (Kraatz)

*Captocycla amurensis* Kraatz, 1879, Dtsch. Ent. Z. 23: 141.

*Metribia amurensis*: Spaeth, 1919, Cat. Col. 62: 142. –Spaeth et Reitter, 1926, Best.-Tab. Eur. Col. 95: 65.

*Cassida (Taiwania) amurensis*: Gressitt, 1952, Proc. Calif. Acad. Sci. 27(17): 489. –Gressitt & Kimoto, 1963, Pacific Ins. Monogr. 1B: 969.

*Taiwania (s. str.) amurensis* (Kraatz): Chen et al, 1986, Fauna Sinica, Insecta: 510, 629.

Material examined: 5exs, Mao'ershan (Heilongjiang Province), 2-VI-2007; 2exs, Mao'ershan (Heilongjiang Province),

20-VIII-2007; 3exs, Dailing-liangshui (Heilongjiang Province), 2-VII-2005; 1ex, Xiaojinshan (Heilongjiang Province), 19-VI-1961; 1ex, Boli-tongtiany (Heilongjiang Province), 7-VII-1976; 6exs, Laoshan (Heilongjiang Province), 3-VI-2007; 1ex, Suifenhe (Heilongjiang Province), 23-VII-2007; 3exs, Song-fengshan (Heilongjiang Province), 10-VII-2007.

Host plants: *Convolvulus* spp.

Distribution: China (Heilongjiang, Jilin), Korea, Russia (Siberia).

Remarks: This species is firstly recorded from Heilongjiang Province.

**New record species of *Cassida* in China (Figs. 1-3)***Cassida flaveola* Thunberg, 1794

*Cassida obsoleta* Illiger, 1798: 484, Gyllenhal, 1813: 444; Schönherr, 1817: 215; Stephens, 1829: 229, 1832: 368; Gardiner, 1837: 276; Suffrian, 1844: 372; Boheman, 1854: 455, 1856: 140, 1862: 342; Bach, 1856: 319; Seidlitz, 1875: 489; Rupertsberger, 1876: 400; Heyden, 1877: 365.

*Cassida pallida* Paykull, 1799: 50, Suffrian, 1844: 272.

*Cassida ferruginea*: Marsham, 1802: 148, 1781; Schönherr, 1817: 216.

*Cassida exsculpta* Charpentier, 1825: 231; Boheman, 1854: 456.

*Cassida kusnetzovi* Matis, 1974: 1101; Medvedev, 1992: 600.

*Cassida flaveola* Thunb: Medvedev, L. N., 1992, Nauka, Sankt-Petersburg: 600.



**Figs. 1-3. *Cassida flaveola* Thunberg**  
1. Dorsal view 2. Lateral view 3. Ventral view

Description: Body length 5mm, width 3mm, elliptical. Dorsal surface usually pale yellow, explanate margin of elytra slightly declivous; ventrites black, clypeus and out margin of abdomen straw yellow; antennae and legs uniformly yellow. Antennae elongate, reaching humeral angle, 3rd to 5th segments equal in length, each longer than the 2nd, last 4 segments dark. Clypeus trapezoidal, impunctate; clypeal grooves very fine. Pronotum semicircular, narrower than base of elytra; lateral angle of pronotum rounded-obtuse; disc of pronotum punctate. Hump of elytra not strongly convex; humeral callus of elytra present.

Puncture on disc of elytra coarse and regular without any extra punctures in interspace area. Distance between punctures mostly wider than their own diameter; base of elytra undentate and black.

Material examined: 1ex, Wuying, Prov. Heilongjiang, 15-VI-1981.

Host plants: *Malachium aquaticum*, *Stellaria graminea*, *Stellaria media*, *Honckenyia peploides*.

Distribution: China (Heilongjiang), Palaearctic region including Russian Far East.

#### Key to the species of genus *Cassida* of Northeast China (Modified base on Chen, 1986)

1. Body pentagonal; explanate margin of elytra transparent only at middle and apex dorsal hump transversely raised, disc of elytra with irregular swellings and ridges, clypeal area with punctures, claws simple.....*C. vespertina*  
- Without the above combination of characters, body ovate or oblong-ovate.....2
2. Pronotum wrinkled or alutaceous, usually with coarse and dense punctures, pronotum and explanate margin of elytra usually opaque.....3  
- Pronotum smooth, pronotum and explanate margin of elytra usually transparent.....15
3. Claws appendiculate; disc of elytra usually closely, densely and irregularly punctate, clypeus with punctures, body not convex.....*C. viridis*  
- Without the above combination of characters; claws simple.....4
4. Basal elytra with black denticulation, extending beyond 9th puncture-row.....5  
- Basal elytra without distinct denticulation, or with denticulation but no black or extending beyond 9th puncture-row.....16
5. Clypeal yellowish or reddish brown; with deeply clypeal grooves forming a triangle areas; scutellum punctate, ventrites black, legs pale, explanate margin of elytra with black patch on posterolateral portion.....*C. piperata*  
- Without the above combination of characters.....6
6. Elytra without any extra punctures among puncture-rows.....7  
- Elytra with extra irregular punctures, at least between 3rd and 4th puncture-rows.....8
7. Explanate margin of elytra thickened at borders in central portion; explanate margin of elytra with black speckles, ventrites black, head and legs yellowish brown.....*C. nebulosa*  
- Explanate margin of elytra not thickened at borders in central portion, explanate margin of elytra without black speckles; scutellum, legs and antennae black.....*C. murraea*
8. Humeral callus of elytra with black spots, suture with longitudinal black spots, each elytron with several black elongate spots in two longitudinal lines, ventrites black.....*C. lineola*  
- Humeral callus of elytra without black spots.....9
9. Legs completely black.....10  
- Legs not completely black, at least with tibiae and tarsi yellow-brown or red-brown.....11
10. Dorsum completely black, elytra with irregular rugae.....*C. mongolica*  
- Dorsum completely rusty red, elytra without irregular prominent rugae.....*C. fuscicornis*
11. Femora almost black, dorsum with blood-red dapple, disc of elytra with sparse punctures and dense pubescence.....*C. vibex*  
- Femora entirely yellow-brown, or at most black at base .....12
12. Pronotum narrower than base of elytra.....13  
- Pronotum not narrower than base of elytra.....14
13. Body rounded, elytra usually black, disc and explanate margin of pronotum with similar punctures.....*C. pallidicollis*

- Body elliptical, elytra usually yellow-brown, disc of pronotum much more finely punctured than explanate margins.....*C. spaethi*
- 14. Disc of elytra with minute pubescence, legs yellow-brown.....*C. mandli*  
- Minute pubescence on disc not distinct, basal femora black.....*C. prasina*
- 15. Explanate margin of elytra with dark spots both at base and behind middle, dorsal hump slightly convex, not strongly raised.....*C. amurensis*  
- Explanate margin of elytra with dark spots only behind middle, dorsal hump prominent, X-shaped.....*C. versicolor*
- 16. Dorsal hump distinct, but not prominent, base of elytra denticulate, clypeal area with longitudinal groove, elytra slightly swollen at suture behind scutellum.....*C. concha*  
- Dorsal hump absent, base of elytra not denticulate.....17
- 17. Head black, femora at least black at basal half .....18  
- Head yellow-brown, femora completely yellow-brown, or at most dark at base.....19
- 18. Pronotum with coarse and dense punctures; femora mostly black, except for apical portions.....*C. velaris*  
- Pronotum with shallow and sparse punctures; femora with basal half black and apical half yellowish.....*C. nobilis*
- 19. Elytra with irregular punctures in 3rd interspace of puncture-rows.....*C. parvula*  
- Elytra without irregular punctures in any interspaces of puncture-rows.....20
- 20. Ventrites brownish to reddish, elytra puncture-rows in pairs, and interspaces of puncture-rows impunctate.....*C. berolinensis*  
- Ventrites black, except for out margins of abdomen brownish to reddish; puncture-rows on elytra not in pairs.....*C. flaveola*

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